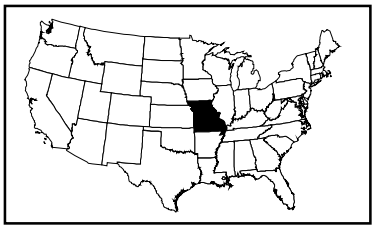

The Tumbling Creek cavesnail is found in only one cave in Taney County, Missouri.

Photo by Dave Ashley

Tumbling Creek Cavesnail

The Tumbling Creek cavesnail has been listed by the U.S. Fish & Wildlife Service as an *endangered species.* Endangered species are animals and plants that are in danger of becoming extinct. *Threatened species* are animals and plants that are likely to become endangered in the foreseeable future. Identifying, protecting, and restoring endangered and threatened species are the primary objectives of the U.S. Fish and Wildlife Service's endangered species program.

What is the Tumbling Creek cavesnail?

Scientific Name - *Antrobia culveri*

Appearance - The Tumbling Creek cavesnail is a small (1/10 inch long) snail that lives in a stream that flows through Tumbling Creek Cave. Typical of many cave-dwelling species, it is blind and pale-colored. The body is white and the shell is pale yellow and has three whorls.

Range - As its name implies, this snail is found only in Tumbling Creek Cave which is in Taney County in southwestern Missouri.

Habitat - The Tumbling Creek cavesnail lives on the underside of large rocks in areas of Tumbling Creek that have little or no silt. Not much is known about the species and its life history, but it is thought to feed on microscopic animals in the stream. The cavesnail occurs in areas of the cave stream that are adjacent to large deposits of bat guano, so it is thought that they may be dependent, indirectly, on the deposits.

Population Trends - Monitoring of population trends during the last six years revealed a continued and accelerated decline. A March 2001 thorough survey of all available and accessible habitat yielded only 40 individuals. Surveys conducted from May 2001 through May 2002 found no snails in the established survey area and only a few individuals in a location upstream from the main survey area.

Why Save a Cavesnail?

Tumbling Creek Cave has high species diversity and supports a large maternity colony of endangered gray bats. Because the cavesnail inhabits Tumbling Creek, the species is an excellent barometer of water quality within the cave's recharge area. Actions that protect the cavesnail from extinction will conserve the cave, its other inhabitants, and local water quality.

Why is the Tumbling Creek cavesnail endangered?

Exact reasons for the alarming decline in the cavesnail's population numbers are currently unknown but the following are thought to be contributing factors:

Poor Water Quality - The cavesnail may be threatened by actions in the cave's recharge area (the area of land that feeds water to the cave stream) that degrade Tumbling Creek's water quality. Turbidity in the stream - a possible threat to the snails - has noticeably increased over time. This is possibly due to increased erosion caused by the removal of streamside vegetation and livestock overgrazing on steep slopes within the recharge area. Other potential sources of pollution include the drainage of barnyard and feedlot wastes and the discharge of treated sewage into sinkholes. Accidental chemical spills and dumping trash into sinkholes also threaten Tumbling Creek's water quality. Turbidity and pollution may harm the cavesnails directly, or may somehow allow other cave stream animals to "out compete" the snails.

Residential Development - Tumbling Creek Cave is about 30 miles from Branson, Missouri, which is a rapidly expanding residential and tourist area. It is likely that there will be increased demands for recreational and residential development within the cave's recharge zone, as Branson expands and people continue to visit the area.

What is being done to prevent extinction of the Tumbling Creek cavesnail?

Listing - The Tumbling Creek cavesnail has been added to the U.S. List of Endangered and Threatened Wildlife and Plants, providing the protection of the Endangered Species Act.

Surveys - Population numbers of the Tumbling Creek cavesnail have been regularly monitored since 1996 using a standardized sampling protocol.

Recharge zone mapped - The cave's owner, an expert cave hydrologist and geologist, mapped the recharge zone of the cave; this may help identify the source of threats within the recharge area and pinpoint areas where conservation actions are needed.

Habitat Protection - The cave and 395 adjoining acres were designated as a National Landmark and included on the National Registry of Natural Landmarks. About 25 percent of the recharge zone is owned and managed by the USDA Forest Service and the U.S. Army Corps of Engineers. Private landowners in other parts of the recharge area are reducing erosion and pollution of the underground water system by stabilizing stream banks, re-establishing vegetation in overgrazed areas, and removing trash from gullies.

What can I do to help prevent the extinction of species?

Learn - Learn more about the Tumbling Creek cavesnail, why cave stream systems are barometers of aquifer water quality, and why cave streams should be protected. Tell others about what you have learned.

Protect - Protect water quality by minimizing use of lawn and pasture chemicals (i.e., fertilizers, herbicides, and insecticides), recycling used car oil, and properly disposing of paint and other toxic household products.

Join - Join a conservation group, many have local chapters, or volunteer at a local National Wildlife Refuge, nature center, or zoo.

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